GENERAL BIOLOGY

CHARACTERIZTION OF THE GASTROINTESTINAL MICROBIOTA IN HEALTH AND DISEASE.

John J. Karijolich 600 Campus Dr. Ripon, WI. 54971KarijolichJ@ripon.edu, Nita H Salzman M.D. PH.D.* Medical College of Wisconsin8071 Watertown Plank Road Milwaukee, WI. 53226

The current "working model" for the pathophysiology of Crohns Disease (CD) is that there is an abnormal immune response to the normal commensal bacteria in genetically susceptible individuals. Evidence for the role of enteric bacteria comes from the fact that genetically altered mice fail to develop CD in a germ free environment, and only upon exposure to a "normal" environment do the develop CD. Recently 3 mutations in a gene denoted NOD2/CARD15 have been associated with the pathogenesis of CD, and approximately 40% of CD affected individuals have one of the disease conferring mutations. NOD2/CARD15 is located in the pericentromeric region of chromosome 16 (16q12). It encodes a cytosolic receptor for a component of the bacterial cell wall known as muramyl dipeptide, and is capable of activating nuclear factor kappa B (NF-κB) through a leucine rich repeat domain at its carboxyl terminus. Thus, it has the ability to propagate a pro- inflammatory immune response. The aim of this study is to characterize the bacterial composition of individuals with CD with respect to the NOD2/CARD15 mutations. Characterization of the effects of NOD2/CARD15 on the intestinal microbiota could lead to a greater understanding of the pathophysiology of CD and ultimately to the development of better treatments, such as new antibiotics, probiotics and prebiotics. We hypothesize that abnormalities in this bacterial sensing receptor could lead to alterations in the composition of the commensal microbiota. This in turn could trigger or perpetuate a mucosal immune response to the commensal bacteria.